K4D | Knowledge, evidence and learning for development

COVID-19 Demography Evidence Summary No.5

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This is the fifth of a weekly COVID-19 Demography Evidence Summary (DES) to signpost DFID and other UK government departments to the latest relevant evidence and discourse on COVID-19 to inform and support their response. It is a result of 4 hours of work per week and is not intended to be a comprehensive summary of available evidence on COVID-19 but aims to make original documents easily accessible to decision-makers which, if relevant to them, they could refer to before making decisions.

This DES looks specifically to the demographic indicators that impact on transmission/spreading and mortality rate, and the emerging policy advice on tailoring such responses to account for demographic indicators.

** Means a specific focus on Africa.*

Academic journal articles and research papers

*Socio-demographic and epidemiological consideration of Africa's COVID-19 response: what is the possible pandemic course?

Gaye, B., Khoury, S., Cene, C.W. *et al.* | *Nature Medicine* | June 11, 2020 | tags: policy

https://doi.org/10.1038/s41591-020-0960-y

http://www.ox.ac.uk/news/2020-06-11-african-countries-battle-ready-take-covid-19 (link to related blog post)

Abstract: The four African countries that have been most heavily hit have the highest gross domestic products among African countries, and they also have the capacity to treat and monitor the spread of the disease more effectively than other African countries. It is paramount that governments tailor their approaches to their own countries. A successful prevention method that will help to control the outbreak in Africa will need to be achieved by taking into consideration the social, economic and behavioural context of the African population. Africa can take a lesson from

the USA, which attributes the rapid spread of the virus to misinformation and erroneous faulty beliefs and rhetoric that lowered people's perception of their risk. Traditional and religious chiefs may have a major role to play in conjunction with local healthcare organisations and/or authorities. Also deploying well-trained mobile intervention groups that can provide in-home intervention (testing for SARS-CoV-2 and help in practicing the hygiene and safety policy) will help to prevent large crowds at hospitals, which overwhelm healthcare systems. To this end, African countries should keep implementing rapid action and remain vigilant in the upcoming weeks.

*COVID-19 in Africa: the spread and response

Massinga Loembé, M., Tshangela, A., Salyer, S.J. *et al.* | *Nature Medicine* | June 11, 2020 | tags: policy

https://doi.org/10.1038/s41591-020-0961-x

Abstract: Implementation of the Africa Joint Continental Strategy on COVID-19 will require US$420 million over the next six months to stop the COVID-19 pandemic and tackle its immediate economic, humanitarian and health effects. Although several AU Member States and private-sector donors have pledged contributions to the AU COVID-19 response fund, Africa will not be able to meet this demand on its own. International action and solidarity will be needed to beat COVID-19. It is crucial that African countries come together as one and make their voices heard to inform the choice of priorities to ensure maximum impact.
Failure to cooperate globally and to act decisively in Africa will translate into sustained transmission and pose a risk to all.

*COVID-19 in Uganda: Predicting the impact of the disease and public health response on disease burden

Bell, D., Schultz Hansen, K., Kiragga, A.N., Kambugu, A., Kissa, J., & Mbonye, A.K. | *MedRxiv (not peer reviewed)* | June 10, 2020 | tags: comorbidity, policy

https://doi.org/10.1101/2020.05.14.20102202

Abstract: COVID-19 transmission and the public health lock-down response are now established in sub-Saharan Africa, including Uganda. Population structure and prior morbidities differ markedly between countries from those where outbreaks were previously established. Based on recent Ugandan data and theoretical scenarios of programme deterioration, the authors predicted potential additional disease burden for HIV/AIDS, malaria and maternal mortality. Based on population age structure alone Uganda is predicted to have a relatively low COVID-19 burden compared to equivalent transmission in China and Western countries, with mortality and DALYs lost predicted to be 12% and 19% that of Italy. Scenarios of lockdown impact predict HIV/AIDS and malaria equivalent to or higher than that of an extensive COVID-19 outbreak. Emerging HIV/AIDS and maternal mortality data indicate that such deterioration could be occurring. The results predict a relatively low COVID-19 impact on Uganda associated with its young population, with a high risk of negative impact on non-COVID-19 disease burden from a prolonged lockdown response. The results are likely to reflect the situation in other sub-Saharan populations, underlining the importance of tailoring COVID-19 responses to population structure and potential disease vulnerabilities.

*Clinical Management and Mortality among COVID-19 Cases in Sub-Saharan Africa: A retrospective study from Burkina Faso and simulated case analysis

Skrip, L., Derra, K., Kaboré, M., Noori, N., Gansané, A. *et al.* | *MedRxiv (not peer reviewed)* | June 09, 2020 | tags: mortality, age-structure

https://doi.org/10.1101/2020.06.04.20119784

Abstract: There has been limited information about the demographic and clinical characteristics of deceased cases in Sub-Saharan Africa, as well as the impacts of different case management strategies. This is one of the first studies that seek to change this. A synthetic case population was derived probabilistically using distributions of age, sex, and underlying conditions from populations of West African countries to assess individual risk factors and treatment effect sizes. Logistic regression analysis was conducted to evaluate the adjusted odds of survival for patients receiving oxygen therapy or convalescent plasma, based on therapeutic effectiveness observed for other respiratory illnesses. The findings show that across SSA, deceased cases for which demographic data are available have been predominantly male (63/103, 61.2%) and over 50 years of age (59/75, 78.7%). In Burkina Faso, specifically, the majority of deceased cases either did not seek care at all or were hospitalized for a single day (59.4%, 19/32); hypertension and diabetes were often reported as underlying conditions. After adjustment for sex, age, and underlying conditions in the synthetic case population, the odds of mortality for cases not receiving oxygen therapy was significantly higher than those receiving oxygen, such as due to disruptions to standard care (OR: 2.07; 95% CI: 1.56-2.75). Cases receiving convalescent plasma had 50% reduced odds of mortality than those who did not (95% CI: 0.24-0.93). Investment in sustainable production and maintenance of supplies for oxygen therapy, along with messaging around early and appropriate use for healthcare providers, caregivers, and patients could reduce COVID-19 deaths in SSA. The success of supportive or curative clinical interventions will depend on earlier treatment seeking, such that community engagement and risk communication will be critical components of the response.

Using socioeconomics to counter health disparities arising from the covid-19 pandemic

Anderson, G., Frank, J.W., Naylor, C.D., Wodchis, W., & Feng, P. | *BMJ* 2020;369:m2149 | June 08, 2020 | tags: equity

https://doi.org/10.1136/bmj.m2149

Abstract: That analysis recommends that assessments of the covid-19 pandemic and measures to contain it be informed by well-established principles and methods that consider the complex interplay between socioeconomic status and health disparities. The authors also argue these principles can provide a framework to guide strategies to ease physical distancing measures and equitable policies to deal with the pandemic's long-term effects on health and society.

*The impact of COVID-19 control measures on social contacts and transmission in Kenyan informal settlements

Quaife, M., van Zandvoort, K., Gimma, A., Shah, K. *et al.* | MedRxiv (not peer reviewed) | June 07, 2020 | tags: awareness, population density, equity

https://doi.org/10.1101/2020.06.06.20122689

Abstract: Many low- and middle-income countries have implemented control measures against coronavirus disease 2019 (COVID-19). However, it is not clear to what extent these measures explain the low numbers of recorded COVID-19 cases and deaths in Africa. One of the main aims of control measures is to reduce respiratory pathogen transmission through direct contact with others. In this study the researchers collected contact data from residents of informal settlements around Nairobi, Kenya to assess if control measures have changed contact patterns and estimate the impact of changes on the basic reproduction number (R0). The findings show that control measures reduced physical and non-physical contacts, reducing the R0 from around 2.6 to between 0.5 and 0.7, depending on the pre-COVID-19 comparison matrix used. Masks were worn by at least one person in 92% of contacts. Respondents in the poorest socioeconomic quintile reported 1.5 times more contacts than those in the richest. Reductions in R0 are consistent with the linear epidemic growth in Kenya and other sub-Saharan African countries that implemented similar, early control measures. However, negative and inequitable impacts on economic and food security may mean control measures are not sustainable in the longer term.

Links between air pollution and COVID-19 in England

Travaglio, M., Yu, Y, Popovic, R., Selley, L., Santos Leal, N., & Martins, L.G. | *MedRxiv (not peer reviewed)* | June 06, 2020 | tags: environmental

https://doi.org/10.1101/2020.04.16.20067405

Abstract: While progress has been achieved in managing the COVID-19 disease, the factors in addition to age that affect the severity and mortality of COVID-19 have not been clearly identified. Recent studies of COVID-19 in several countries identified links between air pollution and death rates. This study explores potential links between major air pollutants related to fossil fuels and SARS-CoV-2 mortality in England. The levels of multiple markers of poor air quality, including nitrogen oxides and sulphur dioxide, are associated with increased numbers of COVID-19-related deaths across England, after adjusting for population density. It shows that particulate matter contributes to increased infectivity. The study also analysed the relative contributions of individual fossil fuel sources on key air pollutant levels. The levels of some air pollutants are linked to COVID-19 cases and adverse outcomes. This study provides a useful framework to guide health policies in countries affected by this pandemic.

*Limiting Spread of COVID-19 in Ghana: Compliance audit of selected transportation stations in the Greater Accra region of Ghana

Bonful, H., Addo-Lartey, A., Aheto, J., *et al.* | *MedRxiv (not peer reviewed)* | June 05, 2020 | tags: awareness

https://doi.org/10.1101/2020.06.03.20120196

Abstract: Recommendations to prevent infection include appropriate and frequent handwashing plus physical and social distancing. This study conducted an exploratory observational study to assess compliance with these recommendations in selected public transport stations in the Greater Accra region. Majority (80%) of stations in Accra have at least one “Veronica Bucket” with flowing water and soap, but the number of washing places at each station is not adequate. Only a small minority (18%) of stations were communicating the need to wash hands frequently and appropriately, and to practice social/physical distancing while at the station. In most stations (95%), hand washing practice was either not observed, or only infrequently. Almost all stations (93%) did not have alcohol-based hand sanitizers available for public use, while social distancing was rarely practiced (only 2%). In over 90% of the stations, face masks were either not worn or only worn by a few passengers. Awareness creation should aim to elevate COVID-19 risk

perception of transportation operators and clients. Transport operators and stations need support and guidance to enforce hand washing and social distancing.

Accounting for Global COVID-19 Diffusion Patterns, January-April 2020

Jinjarak, Y., Ahmed, R., Nair-Desai, S., Xin, W., & Aizenman, J. | *NBER* Working Paper 27185 | May, 2020 | tags: policy, age structure, mortality

http://www.nber.org/papers/w27185

Abstract: The study investigates the impact of stringency policies on mortality growth dynamics, along with cross-country patterns in the empirical shape of the mortality curve. It finds that higher stringency index levels were significantly associated with lower mortality growth rates with a lag of 2, 3, and 4 weeks. The effect of a 10-unit rise in the stringency index levels on future mortality growth was stronger in countries that appear to be more vulnerable ex-ante to COVID-19 type breakouts: countries with greater elderly populations, cooler temperatures, more international flow, and higher levels of the EIU Democracy index. In terms of peak mortality rates across countries, the study finds that proactive stringency policies early on were significantly associated with lower mortality peaks, while higher mobility levels were significantly associated with higher mortality peaks. As for pandemic duration-to-first peak, higher mobility levels were associated with shorter average pandemic durations (despite higher mortality peaks), while greater elderly population and greater shares of employment in vulnerable sectors were associated with longer average pandemic durations.

Comorbidity and its impact on 1590 patients with COVID-19 in China: a nationwide analysis

Guan W-j, Liang W-h, Zhao Y, *et al.* | *European Respiratory Journal*; 55: 2000547 | May, 2020 | tags: comorbidity

https://doi.org/10.1183/13993003.00547-2020

Abstract: The most prevalent comorbidity was hypertension (16.9%), followed by diabetes (8.2%). 130 (8.2%) patients reported having two or more comorbidities. After adjusting for age and smoking status, COPD (HR (95% CI) 2.681 (1.424–5.048)), diabetes (1.59 (1.03–2.45)), hypertension (1.58 (1.07–2.32)) and malignancy (3.50 (1.60–7.64)) were risk factors of reaching the composite end-points. The hazard ratio (95% CI) was 1.79 (1.16–2.77) among patients with at least one comorbidity and 2.59 (1.61–4.17) among patients with two or more comorbidities. A greater number of comorbidities also correlated with poorer clinical outcomes.

Factors associated with hospital admission and critical illness among 5279 people with coronavirus disease 2019 in New York City: prospective cohort study

Petrilli, C.M., Jones, S.A., Yang, J., Rajagopalan, H., O'Donnell, L., et al. | *BMJ* 2020; 369:m1966 | May 22, 2020 | tags: mortality, age-structure. Comorbidity
https://doi.org/10.1136/bmj.m1966

Abstract: Of the 5279 people with COVID-19 disease, 2741 (51.9%) were admitted to hospital, of whom 1904 (69.5%) were discharged alive without hospice care and 665 (24.3%) were discharged to hospice care or died. The strongest risk for hospital admission was associated with age, with an odds ratio of >2 for all age groups older than 44 years and 37.9 (95% confidence interval 26.1 to 56.0) for ages 75 years and older. Other risks were heart failure (4.4, 2.6 to 8.0),

male sex (2.8, 2.4 to 3.2), chronic kidney disease (2.6, 1.9 to 3.6), and any increase in body mass index (BMI) (e.g. for BMI >40: 2.5, 1.8 to 3.4). Similar associations were found for mortality alone. Therefore, this study concludes that age and comorbidities were found to be strong predictors of hospital admission and to a lesser extent of critical illness and mortality in people with COVID-19.

Extra data on South Africa's COVID-19 mortality rate

*Age distribution COVID-19 deaths in South Africa

Data published on *Wikimedia Commons*

https://commons.wikimedia.org/wiki/File:CoViD-19_deaths_by_age_in_South_Africa.png

SABC news article of 9 June 2020

https://www.sabcnews.com/sabcnews/52-of-south-africas-covid-19-deaths-are-between-the-ages-of-50-and-69-years/

Comments, Editorials, Opinions, Blogs, News

* People with HIV at greater risk of COVID-19 death in South African study

Keith Alcorn | Published on *NAM Aidsmap* | June 10, 2020

https://www.aidsmap.com/news/jun-2020/people-hiv-greater-risk-covid-19-death-south-african-study

COVID-19 reveals unequal urban citizenship in Manila, Dhaka and Delhi

Redento B Recio (PhD in Urban Planning and postdoctoral research fellow at the University of Melbourne's Informal Urbanism (InfUr-) Research Hub), Ishita Chatterjee (pursuing her doctoral studies at the University of Melbourne), Lutfun Nahar Lata (PhD in Urban Sociology at the University of Queensland). | Published on *LSE* | June 05, 2020

https://blogs.lse.ac.uk/covid19/2020/06/05/covid-19-reveals-unequal-urban-citizenship-in-manila-dhaka-and-delhi/

Rolling lockdowns could protect both economies and health in low-income countries

Rajiv Chowdhury (Associate Professor, Global Health Epidemiology, University of Cambridge) | Published on *The Conversation* | June 02, 2020

https://theconversation.com/rolling-lockdowns-could-protect-both-economies-and-health-in-low-income-countries-139054

How to address SRHR at a time that it is considered an unaffordable luxury?

Edith Kayeli Chamwama (Researcher at the Circle of Concerned African Women Theologians and lecturer at the University of Nairobi) | Published on *The Broker* | June 02, 20202

https://www.thebrokeronline.eu/how-to-address-srhr-at-a-time-that-it-is-considered-an-unaffordable-luxury/

Never giving up: youth voices and participation in the time of COVID-19

Agnieszka Kazimierczuk (Knowledge Manager at African Studies Centre, University of Leiden) and Hannah Itcovitz (Knowledge Manager at The Broker) | Published on *INCLUDE* | June 02, 2020

https://includeplatform.net/news/never-giving-up-youth-voices-participation-covid-19/

No-regrets: urgent action needed for education during COVID-19 crisis

Stefan Dercon (Professor at the University of Oxford) | Published on *University of Oxford* | May 29, 2020

https://www.research.ox.ac.uk/Article/2020-05-29-no-regrets-urgent-action-needed-for-education-during-covid-19-crisis

COVID-19 Data hubs relevant for Demography

*Coronavirus in Africa Tracker

Data on confirmed cases in Africa by *African Arguments*
https://africanarguments.org/2020/06/11/coronavirus-in-africa-tracker-how-many-cases-and-where-latest/

Coronavirus (COVID-19) Data Resource Hub

Data resource hub by *Data World*
https://data.world/resources/coronavirus/

Demographic and Social Statistics: countries with a census in 2020 and the impact of COVID-19

Updates on census 2020 and COVID-19 by the *UN Statistics Division*
https://unstats.un.org/unsd/demographic-social/census/COVID-19/

*GeoPoll Data dashboard on COVID-19 impact on Africa

Updates and links to two reports by *GeoPoll*
https://www.geopoll.com/blog/coronavirus-in-sub-saharan-africa-food-security-covid-testing/#dashboard

Migration Data Portal

Migration data relevant for COVID-19 pandemic
https://migrationdataportal.org/themes/migration-data-relevant-COVID-19-pandemic

Understanding the Coronavirus (COVID-19) pandemic through data

Data centre on COVID-19 by the *World Bank Group*
http://datatopics.worldbank.org/universal-health-coverage/coronavirus/

Using mobile operator data

Data portal by *Flowminder*
https://COVID19.flowminder.org/

WorldPop global demographic data

Portal with localised demographic data on sex and age accessible to tailor COVID-19 responses by *Southampton University*
https://www.southampton.ac.uk/publicpolicy/COVID19/tatem-worldpop.page

COVID-19 Resource hubs relevant for Demography

*African Population and Health Research Centre

APHRC COVID-19 Situation updates in Sub-Saharan Africa
https://aphrc.org/COVID-19-situation-updates/

*Africa Centres for Disease Control and Prevention

COVID-19 Resource hub
https://africacdc.org/COVID-19/COVID-19-resources/

*Africa UN Knowledge Hub for COVID-19

One-stop knowledge information centre of all UN agencies on COVID-19 by *UN Development System in Africa*
https://knowledge.uneca.org/COVID19/

Family Planning & COVID-19

Family Planning 2020 COVID-19 resource hub
http://familyplanning2020.org/COVID-19

Global Partnership for Sustainable Development Data

COVID-19 resources hub on data and mapping
http://www.data4sdgs.org/resources/COVID-19-resources

*INCLUDE Knowledge Platform

COVID-19: Challenging Inclusive Development in Africa
https://includeplatform.net/inclusive-development-covid-19-pandemic/

International Conference on Family Planning

COVID-19 and reproductive health
https://icfp2021.org/COVID19

International Union for the Scientific Study of Population

Demographers' contributions to the understanding of the COVID-19 pandemic
https://iussp.org/fr/node/11297

*ONE

The ONE Africa COVID-19 Tracker
https://www.one.org/africa/about/policy-analysis/covid-19-tracker/

Population Council

Responding to the COVID-19 pandemic
https://www.popcouncil.org/research/responding-to-the-COVID-19-pandemic

Population Europe: The Network of Europe's leading Demographic Research Centres

Demography and COVID-19
https://population-europe.eu/news/demography-coronavirus

Supporting the Humanitarian Response to COVID-19

REACH Initiative publishes regular updates from partner countries.
https://www.reach-initiative.org/what-we-do/news/updates-on-ongoing-research-and-activities-linked-to-covid-19-pandemic/

UNFPA

United Nations Population Funds COVID-19 knowledge hub
https://www.unfpa.org/COVID19

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Methodology

The rapid weekly search looks for peer-reviewed academic articles, however, due to rapid developments most academic literature is not peer-reviewed (yet). Therefore, the literature is complemented by a search of the homepage of high-impact global health, demography and population journals and a Twitter search of their Twitter pages. A search also of preprints, for example from medRxiv. Additional commentaries, opinions, and commissioned pieces are selected based on relevance. The search for dashboards, guidelines, tools, editorials, comments, blogs, opinions and news is mostly through academic institutions, journals, C19 resource hubs and following lead academics and professionals on Twitter.

About this report

The weekly Demography Evidence Summaries are not intended to replace professional advice and the researcher or the K4D consortium cannot be held responsible for any decisions made about COVID-19 on the basis of the summaries alone.

K4D services are provided by a consortium of leading organisations working in international development, led by the Institute of Development Studies (IDS), with Education Development Trust, Itad, University of Leeds Nuffield Centre for International Health and Development, Liverpool School of Tropical Medicine (LSTM), University of Birmingham International Development Department (IDD) and the University of Manchester Humanitarian and Conflict Response Institute (HCRI).